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EXAMINER

WEBB, GREGORY E

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/775,264

Applicant(s)

CARUTHERS, EDDIE L.

Examiner

Gregory E. Webb

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10192004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-34 rejected under 35 U.S.C. 102(b) as being anticipated by Sorensson (US5344633).

Concerning the intended use, Sorensson teaches the following:

Further, the invention concerns the use of a silicate according to the above description as a corrosion protecting and/or alkali generating

Art Unit: 1751

substance at cleaning, such as dishwashing, washing up or washing, preferably in a machine. At use, a silicate according to the invention is dissolved in water to a preferred content from about 0.1 to about 4 grams/liter, most preferably from about 0.5 to about 2 grams/liter, preferably together with other active substances such as surfactants, other alkali generating agents, bleaching agents or enzymes.(see col. 3, lines 59-68)

Concerning the solid form, Sorensson teaches the following:

EXAMPLE: Spray dried disilicates of different compositions all having a molar ratio $\text{SiO}_2 : (\text{Na}_2\text{O} + \text{K}_2\text{O})$ of 2 were tested concerning the rate of dissolution according to ISO 3123-1976 (E). For the purpose of simulating compacted material in laboratory scale, the spray dried powder was pressed to tablets at a pressure of 10 tonnes, each one having a weight of 0.5 gram, a diameter of 13.0 mm and a thickness of 1.9 mm. The time for dissolution of each material of a certain composition was measured by putting six tablets in one liter water having a temperature of 25.degree. C. and agitated with a propeller at 600 revolutions/min. The time was measured from the addition of the tablets until the electrical conductivity of the solution was constant. Five different compositions of the dry substance were tested: D=a pure sodium disilicate without additives; D+K2=sodium/potassium disilicate with 1.95% K_2O ; D+K4=sodium/potassium disilicate with 5.0% K_2O ; D+K+S=sodium/potassium disilicate with 3.6% K_2O and 10.2% sodium

Art Unit: 1751

carbonate. The time for dissolution of the above silicates having different water contents appear in seconds in the table below:(see col. 5)

Concerning the gas-releasing component, sodium carbonate and the alkalinity agent, Sorensson teaches the following:

An aqueous solution of sodium silicate may be prepared in a well known way by melting quartz sand with sodium carbonate during liberation of carbon dioxide, whereupon the melt is cooled to a solid material which is dissolved in water at increased temperature. Alternatively, quartz sand can be dissolved in a solution of sodium hydroxide at increased pressure and temperature. According to the invention potassium may be added in the form of potassium hydroxide at the dissolution of quartz sand or be added to the solution prior to the drying, for example in the form of potassium hydroxide, potassium silicate or potassium carbonate. Sodium carbonate or potassium carbonate may be dissolved together with quartz sand in sodium hydroxide or be added to the solution prior to the drying.(see col. 3, lines 44-58)

Concerning the potassium silicate, Sorensson teaches the following:

(a) drying an aqueous solution of an alkali metal silicate to a solid state having a water content from about 16 to about 25% by weight, the alkali metal silicate having a molar ratio $\text{SiO}_2:\text{M}_2\text{O}$ from about 1.5 to about 3 in which M is an alkali metal comprising sodium and potassium;(see claim 6)

Concerning the silicate, Sorensson teaches the following:

The object of the present invention is to provide a solid alkali metal

Art Unit: 1751

silicate which dissolves quickly in water and gives less alkalinity than corresponding metasilicate. This has now been found possible as it has appeared that a silicate with a certain water content and containing a small amount of potassium has considerably improved properties compared to previously known silicates.(see col. 1, lines 58-65)

Concerning the water softener, Sorensson teaches the following:

A washing agent composition according to the invention contains surfactants, preferably anionic and/or nonionic and/or soaps. The anionic surfactants may for example include linear alkylbenzenesulfonates, secondary alkanesulfonate, alcohol-ethoxysulfonate or alpha-olefinsulfonate, the nonionic surfactants may for example include alkoxylated compounds such as fatty alcohols, alkylphenols or alkylamines, while the soaps for example may include sodium or potassium salts of tallow. Moreover, the compositions may contain well known components, for example builders such as phosphates, polyacrylates or zeolites, fillers such as sodium sulfate, alkali generating agents such as carbonates, bleaching agents such as perborate or percarbonate, bleaching activators such as TAED or TAGU (tetra acetyl glucolurile), complex binders such as EDTA (ethylene diamine tetraacetic acid), NTA (nitrilo triacetic acid), dipicolinic acid or phosphonates, enzymes, foam regulators, perfumes, coloring agents and optical brighteners. A useful washing agent may have the following composition in % by weight up to 100%:(see col. 4, lines 48-68)

Art Unit: 1751

Concerning the zeolite, sodium percarbonate and the anti-redeposition, Sorensen teaches the following:

A dishwasher composition may, in addition to a silicate according to the invention, contain other alkali generating agents such as sodium carbonate, metasilicate or water glass, complex binding agents such as STP (sodium tripolyphosphate) or other phosphates, citrate, polyacrylate or zeolite. Further, it may contain bleaching agents such as chloroisocyanurate or hydrogen peroxide generating substances, for example perborate or percarbonate, optionally in combination with TAED (tetra acetyl ethylenediamine) or other bleach activators. Moreover, it may contain surfactants, preferably low-foaming nonionic, for example available under the trade name Berol 776.RTM., enzymes, clay and fillers such as sodium sulphate. A useful dishwasher agent may have the following composition in % by weight up to 100%:(see col. 4, lines 23-38)

Claims 1-34 rejected under 35 U.S.C. 102(e) as being anticipated by Bartelme (US6387864).

Concerning the intended use, Bartelme teaches the following:

They may be used in any type of detergent formulation including for laundry, dishwashing detergents, especially automatic dishwashing detergents, warewashing, hard surface cleaning, clean-in-place (CIP), clean-out-of-place, and so forth.(see col. 7, lines 45-50)

Art Unit: 1751

Concerning the solid form, Bartelme teaches the following:

Alkali metal fatty acid soaps of a mono- or di-carboxylic acid including those of oleic, ricinoleic acid, alk(en)yl succinate such as dodecyl succinate, and fatty acids derived from castor oil, rapeseed oil, groundnut oil, coconut oil, palmkernel oil or mixtures thereof may also be utilized as cosurfactants. Sodium or potassium are commonly used counterions. These fatty acid soaps typically have anywhere from about 8 to about 24 carbon atoms and preferably about 10 to about 20 carbon atoms.(see col. 4, lines 47-55)

Concerning the gas-releasing component, Bartelme teaches the following:

The compositions of the present invention are alkaline based and have at least one source of alkalinity. These alkaline compounds provide excellent detergative action to the detergent compositions. Alkali metal hydroxides, carbonates and bicarbonates are suitably employed in the present invention as sources of alkalinity. While any of the alkali metals may be suitably employed, sodium and potassium are desirable. Sodium hydroxide and sodium carbonate, i.e. soda ash, are utilized in some particular embodiments of the present invention.(see cols. 4-5)

Concerning the potassium silicate, water softener and the zeolite, Bartelme teaches the following:

Phosphorous-free detergency builders include, but are not limited to, alkali metal silicates including cation-exchange amorphous or crystalline

Art Unit: 1751

aluminosilicates (i.e. zeolites) of natural or synthetic origin.(see col. 6, lines 46-49; noting that alkali metal silicates includes potassium silicate)

Concerning the sodium carbonate and the alkalinity agent, Bartelme teaches the following:

10. The composition of claim 1 wherein said caustic compound is potassium hydroxide, sodium hydroxide, sodium carbonate, or a mixture thereof.(see claim 10)

Concerning the anti-redeposition, Bartelme teaches the following:

Examples of water soluble acrylic polymers include, but are not limited to, polyacrylic acid, polymethacrylic acid, acrylic acid-methacrylic acid copolymers, hydrolyzed polyacrylamide, hydrolyzed methacrylamide, hydrolyzed acrylamide-methacrylamide copolymers, hydrolyzed polyacrylonitrile, hydrolyzed polymethacrylonitrile, hydrolyzed acrylonitrile methacrylonitrile copolymers, and so forth, and mixtures thereof. The water soluble salts or partial salts of these polymers including the alkali metal salts of sodium or potassium, and ammonium salts are also suitably employed. In certain embodiments of the present invention, polyacrylic acid polymers, the partial sodium salts of polyacrylic acid or sodium polyacrylate having average molecular weights within the range of 4000 to 8000 are utilized.(see col. 7, lines 8-23)

Claims 1-34 rejected under 35 U.S.C. 102(b) as being anticipated by Davies (US5916866).

Concerning the intended use, Davies teaches the following:

1. In a process for making tablets of compacted particulate laundry

Art Unit: 1751

detergent composition for fabric washing comprising the steps of:(see claim 1)

Concerning the solid form, Davies teaches the following:

In addition, a portion of powder from each batch was tabletted at greater pressure, making uncoated tablets with a strength almost as great as the coated tablets shown in the tables above. These tablets were observed to have higher density, and therefore to show less porosity when placed in water, compared to the coated tablets, even though the coated tablets were slightly stronger.(see col. 13, lines15-23)

Concerning the gas-releasing component, Davies teaches the following:

Effervescent disintegrants may be incorporated in the tablet composition.

This category of materials includes weak acids or acid salts, for example, citric acid, maleic acid or tartaric acid, in combination with alkali metal carbonate or bicarbonates; these may suitably be used in an amount of from 1 to 25 wt %, preferably from 5 to 15 wt %. Further examples of acid and carbonate sources and other effervescent systems may be found in Pharmaceutical Dosage Forms: Tablets, Volume 1, 1989, pages 287-291 (Marcel Dekker Inc. ISBN 0-8247-8044-2).(see col. 7, lines 30-39)

Concerning the potassium silicate and the silicate, Davies teaches the following:

In the detergent tablet of the invention, an amount of an alkali metal silicate, particularly sodium ortho-, meta- or preferably alkali metal silicates at levels, for example, of 0.1 to 10 wt %, may be advantageous in providing protection against the corrosion of metal parts in washing

Art Unit: 1751

machines.(see col. 7, lines 25-30)

Concerning the water softener and the zeolite, Davies teaches the following:

Suitable crystalline sodium aluminosilicate ion-exchange detergency builders are described, for example, in GB 1429143 (Proctor & Gamble). The preferred sodium aluminosilicates of this type are the well known commercially available zeolites A and X, and mixtures thereof. Also of interest is the novel zeolite P described and claimed in EP 384070 (Unilever).(see col. 5, lines 20-27)

Concerning the sodium percarbonate, Davies teaches the following:

Preferred inorganic persalts are sodium perborate monohydrate and tetrahydrate, and sodium percarbonate, advantageously employed together with an activator. Bleach activators, also referred to as bleach precursors, have been widely disclosed in the art. Preferred examples include peracetic acid precursors, for example, tetraacetylene diamine (TAED), now in widespread commercial use in conjunction with sodium perborate; and perbenzoic acid precursors. The quaternary ammonium and phosphonium bleach activators disclosed in U.S. Pat. No. 4,751,015 and U.S. Pat. No. 4,818,426 (Lever Brothers Company) are also of interest. Another type of bleach activator which may be used, but which is not a bleach precursor, is a transition metal catalyst as disclosed in EP-A-458397, EP-A-458398 and EP-A-549272. A bleach system may also include a bleach stabiliser (heavy metal sequestrant) such as ethylenediamine

Art Unit: 1751

tetramethylene phosphonate and diethylenetriamine pentamethylene phosphonate.(see col. 6, lines 41-58)

Concerning the sodium carbonate and the alkalinity agent, Davies teaches the following:

Preferred tabletted detergent compositions according to the invention suitably contain alkaline material, e.g. 10-20 wt % sodium carbonate, in order to achieve a desired pH of greater than 9.(see col. 6, lines 29-33)

Claims 1-34 rejected under 35 U.S.C. 102(b) as being anticipated by Yurko (US4397777).

Concerning the intended use, Yurko teaches the following:

This invention relates to heavy duty laundry detergent compositions comprising a water-soluble mixture of paraffin sulfonate detergent, olefin sulfonate detergent and sodium silicate plus a water-insoluble molecular sieve or colloidal silica.(see abstract)

Concerning the gas-releasing component, potassium silicate, silicate, sodium bicarbonate and the sodium carbonate, Yurko teaches the following:

In addition of the mentioned constituents of the present compositions it is important to have present, as a suitable builder salt, a water soluble sodium silicate. Such builder should have an $\text{Na}_2\text{O}:\text{SiO}_2$ ratio in the range of 1:1.6 to 1:2.8, preferably 1:2 to 1:2.6 and most preferably about 1:2.5. Such a silicate is available from the Huber Chemical Co., Inc. With an $\text{Na}_2\text{O}:\text{SiO}_2$ ratio of 1:2.5, it is sold as a

Art Unit: 1751

polysilicate under the identification, Huber CH-171-12-2. Other builder salts may be employed together with the sodium silicate and in some instances, a comparatively small quantity, up to 30% of the total alkali metal silicate content, of potassium silicate of similar Na.sub.2 O:SiO.sub.2 ratio may be used. Among supplementing builder salts that may be employed are included sodium bicarbonate, borax, sodium gluconate and sodium citrate. In some instances, where it may not be objectionable to utilize the phosphates, nitrogen-containing builder salts or carbonates, pentasodium tripolyphosphate, tetrapotassium pyrophosphate, tetrasodium pyrophosphate, trisodium nitrilotriacetate and sodium carbonate may be utilized, preferably in total proportion not exceeding that of the silicate present. However, it is generally preferable to avoid employing phosphates, nitrogen-containing compounds and carbonates. In fact, one of the outstanding achievements of the present invention is that without using such builder salts excellent washing properties are obtainable, comparable to those of commercial phosphate-containing products with similar synthetic organic detergent active ingredient contents.(see col. 6, lines 10-38)

Concerning the water softener and the zeolite, Yurko teaches the following:

Preferred crystalline types of zeolites utilized as molecular sieves in the invention are zeolites of the following crystal structure: A, X, Y, L, mordenite, chabazite and erionite and other molecular sieve zeolites disclosed in Table 9.6 of the text, Zeolite Molecular Sieves, by Donald W.

Art Unit: 1751

Breck, published by John Wiley & Sons in 1974. Generally, preferred are the molecular sieve zeolites with $\text{Al}_2\text{O}_3:\text{SiO}_2$ molar ratios of 1:2 to 1:4. Mixtures of these and equivalent molecular sieve zeolites can also be used. There preferred crystalline structure types of zeolites are well known in the ion exchange art. Most preferably the molecular sieve zeolite used is a synthetic molecular sieve type A crystalline zeolite, which is more particularly described on page 133 of the aforementioned Breck reference. Best results are generally obtained using a Type 4A molecular sieve zeolite wherein the univalent cation of the zeolite is sodium and the pore size of the zeolite is about 4 Å (nominal). These especially preferred zeolite molecular sieves are described in U.S. Pat. No. 2,882,243 which refers to them as zeolite A. (see col. 5, lines 1-21)

Concerning the alkalinity agent, Yurko teaches the following:

1. A heavy duty particulate laundry detergent composition comprising in weight percentages, 12% paraffin sulfonate wherein the paraffin alkyl group is from 14 to 20 carbons with an average of 15 carbons, 6% higher olefin sulfonate produced by sulfonating an alpha-olefin of 15 to 20 carbons with about one equivalent of diluted sulfur trioxide, neutralizing with excess sodium hydroxide and heating the alkaline mixture above 150.degree. C. to open the sultone rings in the mixture, 25% polysilicate of the formula Na_2SiO_3 wherein the ratio Na_2O to SiO_2 is 1 to 2.5, 10% 4 A zeolite molecular sieve containing 2%

Art Unit: 1751

moisture and having a mean particle diameter of 8.3 microns, 0.5% sodium carboxymethyl cellulose, 1% optical brightener, 0.5% perfume, 26.7% anhydrous sodium sulfate, 15% moisture and 3.3% other materials associated with paraffin and olefin sulfonates.(see claim 1)

Concerning the anti-redeposition, Yurko teaches the following:

The minor adjuvants may also include an organic gum anti-redeposition agent, such as sodium carboxymethyl cellulose, polyvinyl alcohol, hydroxymethyl ethyl cellulose, polyvinyl pyrrolidone, polyacrylamide, hydroxypropyl ethyl cellulose or mixtures thereof. Preferably the anti-redeposition agent is sodium carboxymethyl cellulose.(see col. 6, lines 57-63).

Claims 1-34 rejected under 35 U.S.C. 102(b) as being anticipated by Mazzola (US5443751).

Concerning the intended use, Mazzola teaches the following:

There is continuing interest in the development of heavy duty laundry detergents which exhibit improved properties for cold water laundry applications.(see col. 1, lines 45-48)

Concerning the gas-releasing component and the silicate, Mazzola teaches the following:

Suitable water-soluble inorganic salt detergent builder compounds include alkali metal and ammonium carbonates, bicarbonates, sesquicarbonates, silicates, phosphates, orthophosphates, pyrophosphates, tripolyphosphates, silicates, borates, and the like. Sodium and potassium carbonates,

Art Unit: 1751

bicarbonates, sesquicarbonates and tripolyphosphates are illustrative of preferred types of inorganic salt detergent builder compounds.(see col. 2, lines 12-20)

Concerning the potassium silicate, Mazzola teaches the following:

It is generally desirable to include a sodium or potassium silicate ingredient in the laundry detergent composition to provide buffering capacity and to prevent corrosion of metal parts in washing machines.(see col. 2, lines 54-58)

Concerning the water softener and the zeolite, Mazzola teaches the following:

FIG. 2 is a summary of comparative results. The data demonstrate that sodium stearate is more effective than calcium stearate or zeolite A for reducing the cold water residue of detergent solids under fabric washing conditions.(see col. 4, lines 8-10)

Concerning the sodium percarbonate, Mazzola teaches the following:

A present invention laundry detergent composition can contain other optional detergent adjuncts, which include lather boosters such as alkanolamines, lather depressants such as alkyl phosphates or silicones, anti-redeposition agents such as sodium carboxymethylcellulose, oxygen-releasing bleaching agents such as sodium perborate or sodium percarbonate, fabric softening agents, fluorescent agents, perfumes, enzymes, germicides, colorants, and the like.(see col.2, lines 42-50)

Concerning the sodium bicarbonate, sodium carbonate and the alkalinity agent, Mazzola teaches the following:

2. A powder detergent composition in accordance with claim 1 wherein the

Art Unit: 1751

inorganic salt ingredient comprises a mixture of sodium bicarbonate and sodium carbonate.(see claim 2)

Concerning the anti-redeposition, Mazzola teaches the following:

A preferred type of anti-redeposition agent is sodium polyacrylate having a molecular weight of 10,000-50,000.(see col. 2, lines 51-53)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory E. Webb whose telephone number is 571-272-1325. The examiner can normally be reached on 9:00-17:30 (m-f).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Gregory E. Webb
Primary Examiner
Art Unit 1751

gew